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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,507

09/13/2004

Akio Ozasa

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EXAMINER

BODAWALA, DIMPLE N

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

05/12/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/507,507	<b>Applicant(s)</b> OZASA ET AL.	
	<b>Examiner</b> DIMPLE N. BODAWALA	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 26-41 is/are pending in the application.
- 4a) Of the above claim(s) 20-25, 42 and 43 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11, 31, 33, 37, 39 and 40 is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-19, 26-32, 34-36, 38 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/29/2009</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

In view of the amendment filed on 1/29/2009 following rejections are maintained as a reason of record from the previous office action mailed on 10/29/2008.

- ▶ Rejection of claims 1-6,12-18,26-28,32,34-36,38 under 35 USC 102(b) as being anticipated by Andersen et al. (US 5,783,126).
- ▶ Rejection of claims 7-8 and 29-30 under 35 USC 103(a) as being unpatentable over Andersen et al. (US 5,783,126).
- ▶ Rejection of claims 19 and 41 under 35 USC 103(a) as being unpatentable over Andersen et al. (US 5,783,126) in view of Okazaki et al. (EP 0679509).
- ▶ Allowable subject matter for claims 9-11,31,33,37,39,40.

### ***Election/Restrictions***

1. Claims 20-25 and 42-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected a mold, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/25/2008.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Terminal Disclaimer***

3. The terminal disclaimer filed on 6/25/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 7,332,214 has been reviewed and is accepted on 9/15/2008. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-6, 12-18, 26-28, 32, 34-36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Andersen et al. (US 5,783,126).**

6. As to claim 1, Andersen et al. discloses method for manufacturing articles, wherein method comprises steps of:

- Preparing a slurry or dough molding material, which is made by mixtures of starch, water and other material (See col.1 lines 51-60; col.4 lines 64-67; col.7 lines 21-27);
- applying coating film (See col.5 lines 18-21) or selected coating material can be added to mixture prior to formation of the article (See col.10 lines 9-18; col.13 lines 37-42), wherein selected coating material comprises of biodegradable material (See col.49);

- heating step is carried out by a variety of ways such as electrical heating, stem heating, infrared light, etc. (See col.45 lines 1-10) and press molding process are capable to heat and mold the molding material and the coating film in a mold having a given-shaped cavity to mold the molding material through the steam expansion, and at the same time soften and pressure bond the coating film to a surface of a biodegradable expanded molded article obtained through the steam expansion molding;
- a plurality of exhaust hole (12, 14, 16, 18), wherein holes (14) are located on the mold (See figure 14), wherein such holes are capable to exhaust gas between molded article which is capable to have the coating film on the surface and the surface of the mold is capable to molded the article in desired shape (See figure 2, 14; col.18 lines 46-54; col.19 lines 8-12; col.23 lines 23-50).

7. As to claim 2, it further teaches that a space leading to the cavity through the exhaust hole is formed inside the mold, and in the heating and molding step, space is hermetically separated from outside the mold (See figure 19).

8. As to claim 3, it further teaches that the hermetically separated space has a volume set between third and twice that of a void in the cavity before heating and molding (See figures 18-19).

9. As to claim 4-5, 26-28, it further teaches that the gas existing between the coating film and a surface of the mold is discharged out of the mold through the holes (12, 16,

18) in the heating and molding step (See figure 2), Wherein the exhaust hole has a cross section between  $0.12 \text{ mm}^2$  and  $1.13 \text{ mm}^2$  (See col.23 lines 33-49).

10. As to claim 6, Andersen et al. discloses method for manufacturing articles, wherein method comprises steps of:

- Preparing a slurry or dough molding material, which is made by mixtures of starch, water and other material (See col.1 lines 51-60; col.4 lines 64-67; col.7 lines 21-27);
- applying coating film (See col.5 lines 18-21) or selected coating material can be added to mixture prior to formation of the article (See col.10 lines 9-18; col.13 lines 37-42), wherein selected coating material comprises of biodegradable material (See col.49);
- heating step is carried out by a variety of ways such as electrical heating, stem heating, infrared light, etc. (See col.45 lines 1-10) and press molding process are capable to heat and mold the molding material and the coating film in a mold having a given-shaped cavity to mold the molding material through the steam expansion, and at the same time soften and pressure bond the coating film to a surface of a biodegradable expanded molded article obtained through the steam expansion molding;
- inside the mold of a deep drawing shape the molding material and the coating film being placed substantially flat for heating and molding the material into a deep drawing shape such as cup (See figures 9-10, and 18-19).

11. As to claim 16, 17, 36, it further teaches that the molds are made of metal along with TEFLON coating (See col.44 lines 59-65), which inherently suggests that the surface of the mold is coated with slip agent such as PTFE as fluoropolymer which is in contact with biodegradable molding material during the molding process.

12. As to claim 18, 38, it further teaches that the coating film is a film mainly made of denatured polyester (See section of “coating film” col.49 lines 35 through col. 50 line 2).

13. As to claim 14-15, 34-35 it further teaches that the heating is done so that mold has a temperature 150-220 C (See col.22 lines 37-54).

14. As to claims 12-13, 32, Andersen teaches that the mold can be heated in a variety of ways, which is used to vary the temperature of the molds along the length of the mold in order to vary the properties of the hardened matrix within the molded article (See col.45 lines 1-10). By varying the temperature and processing time it is possible to affect the density, porosity and thickness of the surface layer or skin (See col.45 lines 11-15). It further teaches that the temperature of the mold has little, if any significant effect on the rate of formation of the cells after the drop in pressure (See col.21 lines 30-35). It further teaches that the heating is done so that mold has a temperature 150-220 C (See col.22 lines 37-54) and coating consisting of selected material, wherein some of the biodegradable material (such as epoxy) having melting point 176 C, wherein such statement indicates that the mold is capable to having heating temperature which is at least 10C lower than the melting point of coating film (such as epoxy), so the coating

film is capable to soft rather than melt, and, thus, which easy to bond with the surface of the molded article.

15. Andersen et al. discloses all claimed structural limitations as discussed above, and, thus, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not



commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**19. Claims 7-8 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen et al. (U S Patent No. 5,783,126).**

20. Andersen et al. discloses all claimed structural limitations as discussed above. It further teaches the coating film being deformed at desired temperature and figures show that concave and convex mold are closed to each other, but fails to teach or suggest steps of movement of the mold members as cited in claims 7-8 and 29-30.

21. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Andersen et al. by providing steps of movement of concave and convex molds, while coating film is deforming, so that the coating film adhered to the surface of the molded articles properly, without any gap or pinholes, and, thus, able to produce article with good appearance.

**22. Claims 19 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen et al. (U S Patent No. 5,783,126) in view of Okazaki et al. (EP 0679509 A2).**

23. Andersen et al. discloses all claimed limitations as discussed above, but fail to teach or suggest the coating film is a biaxially stretched film.

24. Okazaki et al. ('509) disclose biaxially oriented laminated film as a biaxially stretched film with excellent scratch resistance, and friction property as well as excellent dubbing resistance (See abstract).

25. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention Andersen et al. ('214) by providing a biaxially stretched film as coating film because the biaxially stretched film having excellent scratch resistance, dubbing resistance and friction property, wherein utility of the film prevents the article to degrade in high temperature, and, thus, able to maintain high quality image of the molded article as suggested by Okazaki et al.

***Allowable Subject Matter***

26. **Claims 9-11, 31, 33, 37, 39 and 40 are allowed.**

27. The following is an examiner's statement of reasons for allowance: The prior arts of record fails to teach or suggest a method of manufacturing the biodegradable articles as defined in claims of the instant application. The closet prior arts Andersen et al. (U S Patent No. 5,783,126), Okazaki et al. (EP 0679509 A2) and Ozasa et al. (U.S. Patent No. 7,332,214) fail to teach or suggest the method step of a central part of the coating film being deformed by moving the convex and concave molds in a direction, wherein these molds are fit and at least while the coating film is being deformed a relative moving speed of the convex mold to a plane formed by connecting a surface of non-deforming parts on an outer periphery of the coating film being maintained from 8 mm/s to 12 mm/s as defined in claim 9 of the instant application. None of prior arts of record, taken alone

or in combination, inter alia teaches or fairly suggests the limitation of apparatus as set forth in the claims of the instant application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

28. Applicant is advised that the amendment filed on 6/25/2008, wherein the status of claims 20-25 and 42-43 indicated as cancelled, while the amendment of claims filed on 1/29/2009, wherein status of claims 20-25 and 42-43 indicates as withdrawn. Therefore, appropriate correction is required.

29. Applicants note that the examiner has included claim 37 in the rejection, wherein claim 37 has been found allowable. Applicant's suggestion fully considered. Applicants are advised that rejection of claim cites typographical error by citing claim 37 in the rejection of claims. However, office action summary and allowable subject matter paragraph indicate that the claim 37 is depended on claim 9, wherein claim 9 found allowable therefore claim 37 is also found allowable.

30. Applicant's arguments filed on 1/29/2009 have been fully considered but they are not persuasive.

31. Applicant argues that the prior art Andersen et al. (US 5,783,126) does not teach the use of a coating film or heating, softening and pressure bonding of a coating film to

the surface of the molded article. Andersen cites the use of liquid or otherwise sprayed on or deposited coating or inclusion of coating material in the molding material mixture to melt and migrate to and coat the surface of the article. There is no coating film described or placed into the mold and no coating film is heated and the at the same time softened and pressure bonded to the molded article.

32. Applicants' argument is fully considered but not found persuasive because Andersen discloses an invention which is involved to apply uniform coating film on the surface of the article (See col.49 lines 4-6). It further teaches that the molding material comprises coating material which has *approximately* the same melting temperature as the peak temperature of the mixture. As the mixture is heated, the coating material melts and moves with the vaporized solvent to the surface of the article where it coats the surface (See col.49 lines 13-20), thus, article is capable to have coating film on the surface as cited in claim. However, claimed language of the instant claim does not cite that the molding material comprises coating film. It just cites the step of preparing coating film, wherein such step is anticipated by Andersen as discussed above.

33. Applicant further argues that Andersen discloses approximately the same melting temperature as the peak temperature of the mixture and that melts and moves with the vaporized solvent, thus, Andersen is inconsistent with the temperature being at least 10C lower than a melting point of the coating as cited in claims 12 and 32.

34. Applicants' argument is fully considered but not found persuasive because Andersen discloses approximately the same melting temperature as the peak temperature

of the mixture and that melts and moves with the vaporized solvent, wherein phrase “approximately the same melting temperature” gives the definition of “temperature around the melting point”, which is capable to define the temperature being at least 10C lower than the melting point. Furthermore, Andersen teaches that the mold can be heated in a variety of ways, which is used to vary the temperature of the molds along the length of the mold in order to vary the properties of the hardened matrix within the molded article (See col.45 lines 1-10). By varying the temperature and processing time it is possible to affect the density, porosity and thickness of the surface layer or skin (See col.45 lines 11-15). It further teaches that the temperature of the mold has little, if any significant effect on the rate of formation of the cells after the drop in pressure (See col.21 lines 30-35). It further teaches that the heating is done so that mold has a temperature 150-220 C (See col.22 lines 37-54) and coating consisting of selected material, wherein some of the material (such as epoxy resin) having melting point 176 C, wherein such statement indicates that the mold is capable to having heating temperature which is at least 10C lower than the melting point of coating film (such as epoxy), so the coating film is capable to soft rather than melt, and, thus, which easy to bond with the surface of the molded article, thus, Andersen’s invention consistent with temperature being at least 10C lower than a melting point of the coating as cited in claims.

35. Applicant further argues that Andersen discusses either applying a coating after the molded article is finished or including coating material in the mold mixture prior to formation of the article. The embodiment in which the coating is applied after the molded

article is finished cannot by definition include "a gas existing between the coating film and a surface of the mold" because there is no coating present during the heating and molding process.

36. Applicant's arguments are fully considered but not found persuasive because Andersen discloses invention includes a plurality of exhaust hole (12, 14, 16, 18), wherein holes (14) are located on the mold (See figure 14), wherein such holes are capable to exhaust gas between molded article which is capable to have the coating film on the surface and the surface of the mold is capable to mold the article in desired shape (See figure 2, 14; col.18 lines 46-54; col.19 lines 8-12; col.23 lines 23-50).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIMPLE N. BODAWALA whose telephone number is (571)272-6455. The examiner can normally be reached on Monday - Friday at 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PHILLIP C. TUCKER can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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